-- The present invention is a programmable alarm clock system, method of operation and program product therefor with sleep analysis to identify and wake a person during REM, non-REM sleep patterns or other identifiable sleep patterns, such as a slow brain wave pattern. Sleepers awoken during a non-REM phase of sleep suffer less subsequent drowsiness and may function better during normal day-to-day activities. Sleepers awoken during REM sleep or immediately thereafter may be allowed to remember some of the previous evening's dreams. --

Please replace the paragraph beginning on page 5, line 8 with the following rewritten paragraph:

-- Referring now to the drawings, and more particularly, Figure 1 is a block diagram of the preferred embodiment sleep analysis and alarm system arrangement 100 for waking a person 102 during selected periods of sleep. The arrangement includes a local computer 104, which may be a personal computer (PC) for local control. At least one wireless sensor 106 is attached to the eyelids or elsewhere on the head 108 of the sleeping person (sleeper) 102. The local computer is connected over a network 110 to a Computerized Sleep Analyzing Web Server (C-SAWS) 112. The network 110 may be a wireless network or, a more traditional wired network. The local computer 104 is in communication with a Local Alarm Device (LAD) 114 or clock. Optionally, the local computer 104 may be an embedded device, embedded in and part of the LAD 114. Further, the LAD 114 may include the C-SAWS 112 in addition to or independent of inclusion of the local computer 104. --

Please replace the paragraph beginning on page 5, line 20 ~~with the~~ following rewritten paragraph:

-- Before retiring, the user 102 manually inputs a designated wake-up time (DWT) into the local computer 104 that acts as a controller. Alternately, the user 102 may select a preferred wake up pattern in lieu of selecting a DWT. Input may be made vocally through the microphone or manually. The DWT is taken as a target and passed to a Local Alarm Program (LAP) running in the local computer 104. After setting the alarm, the user 102 attaches non-intrusive wireless sensors 106 to strategic spots, e.g., the eyelids or elsewhere head 108. These sensors 106 attached to the head 108, which may be digital or analog, measure brain activity by measuring electrical signals using electroencephelography or polysomnography for example. The wireless eyelid sensors 106, which also may be digital or analog, detect eye movement and transmit appropriate signals to the local computer 104. Analog signals from analog sensors, when used, are converted to digital data in the local computer 104. --

Please replace the paragraph beginning on page 9, line 3 with the following rewritten paragraph:

-- Figure 4 shows a block diagram of the preferred Computerized Sleep Analyzing Web Server 112 in communication with one or more local (LAP) computer 104 through a network 110. The C-SAWS 112 receives brain activity information in Receiving Module 140 which passes the digitized signal to an optional Signal Processing Unit 142. The optional Signal Processing Unit 142 is included when some or all of the sensors 106 are analog. Analog signals from analog wireless sensors 106 are converted to digital signals by the Signal Processing Unit 142. --

Please replace the paragraph beginning on page 9, line 10 with the following rewritten paragraph:

-- The digitized signal is then passed to the Signal Analyzer 144 which charts the data and automatically detects the selected sleep patterns based upon previous selected prototypes. The Signal Analyzer 144 passes the charted data to the Signal Labeler 146, which labels the chart with identified pattern areas labeled as REM periods or non-REM periods (in the example of Figure 3) in a computer readable format acceptable by the local computer 104. When data is requested, a Sender 148 sends the labeled chart over the network, e.g., the Internet, to the requesting local computer 104. --

Please replace the paragraph beginning on page 9, line 17 with the following rewritten paragraph:

-- Figure 5 is a block diagram of an example of the Signal Analyzer 144 which charts data passed to it from the Signal Processing Unit 142 or, when digital sensors 106 are employed, from the LAP unit (local computer 104). The chart data is input to a Normalizer 150 which converts the data to standard input format. The normalized data is sent to a Comparator 152 where it is compared with prototype data from a previous prototype database 154 that includes prototypical periods, REM periods 156 and non-REM periods 158 in the example of Figure 3. These sleep pattern period prototypes may be generated using techniques such as taught in US Patent No. 5,577,135 entitled "Handwriting Signal Processing Front-End For Handwriting Recognizers" to Grajski et al., which is incorporated herein by reference. A Segmentator 160 separates the relevant pattern data, e.g., REM data from the non-REM data, and forwards the separated data to the Signal Labeler 146. --